

REMARKS

This response is intended as a complete response to the Office Action dated September 11, 2006. In view of the following discussion, the Applicants believe that all claims are in allowable form.

SPECIFICATION AND DRAWING OBJECTIONS

The specification and the drawings have been amended to correct an inadvertent error. Specifically, the Applicants have deleted Figure 4 without prejudice and have renumbered Figure 5 as new Figure 4 to correspond to the text of the specification as filed. Replacement sheets for the drawings are provided herewith to renumber the drawing sheets for Figures 1-3, to delete original Figure 4, and to renumber original Figure 5 as Figure 4.

Accordingly, the objection to the Brief Description of the Drawings for the missing Figure 5 is now moot, as there are only four Figures in the application. Similarly, the objection to the description of Figure 4 is now moot, as original Figure 4 has been deleted from the Application. Lastly, the objection to the missing description for Figure 5 is similarly fully addressed, as the description matches the new Figure 4 (originally inadvertently submitted as Figure 5).

Thus, the Applicants believe that all errors in the Specification and Drawings have been satisfactorily addressed. Accordingly, the Applicants respectfully request that the objections be withdrawn and the claims allowed.

IN THE CLAIMS

A. 35 USC §112 Claim 1

Claim 1 stands rejected under 32 USC §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention.

With respect to the limitation of step (b), the Examiner requests an explanation of the relevance of the claimed step. Accordingly, the Applicants note that each of the claimed steps refers to a use of a metrology tool with respect to the claimed method for controlling calibration timing for the tool, as

noted in the claim preamble. Hence, the relevance of step (b) is the use of the metrology tool in between calibration of the tool, as recited in steps (a) and (e).

With respect the term, "a first parameter," in steps (c) and (d), The Examiner request clarification as to whether this is the same "first parameter" recited in step (a). Accordingly, the Applicants have amended limitation (c) in claim 1 to recite "the first parameter" to reflect that the same first parameter is being measured. However, while step (d) also refers to the same first parameter recited in limitation (a), the term "a first parameter measurement drift" is used for the first time in limitation (d), accordingly, the article "a" is used rather than the article "the" in order to recite the first-time occurrence of the term in proper claim form.

With respect the term, "intermittently," in step (c), the Examiner objects to the use of the term "intermittently" as being vague and indefinite. While the Applicants disagree with the Examiner that this makes the claim indefinite, the Applicants have amended the claim to remove the term.

Thus, claim 1 satisfies the requirements of 35 USC §112. Accordingly, the Applicants respectfully request the rejection be withdrawn and the claim allowed.

B. 35 USC §103 Claim 1

Claim 1 stands rejected under 35 U.S.C. §103(a) as being unpatentable over United States Patent No. 6,281,818 issued August 28, 2001 to *Miller* (hereinafter *Miller*). The Applicants respectfully disagree.

The Applicants firstly respectfully submit that *Miller* is non-analogous art. "In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned." MPEP §2141.01(a), citing *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992). "A reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have

commended itself to an inventor's attention in considering his problem." *Id.*, citing *In re Clay*, 966 F.2d 656, 659, 23 USPQ2d 1058, 1060-61 (Fed. Cir. 1992).

Here, the problem is calibration of a metrology tool for measuring parameters of substrates. *Miller* teaches an automatic auto-calibration system for use with an analog-to-digital (A/D) or digital-to-analog (D/A) converter circuit. In looking for a solution to the problem facing the present invention (namely, the drift in measurement of parameters on substrates), the present inventors would not look to auto-calibration systems for A/D or D/A converter circuits. As such, *Miller* is not analogous art with respect to the present invention, and, per MPEP §2141.01(a), is not available as prior art under 35 USC §103.

Moreover, even were *Miller* to be construed, *arguendo*, as analogous art, the Applicants respectfully submit that *Miller*, alone or in combination with the knowledge generally available to one of ordinary skill in the art at the time of the invention, fails to teach or suggest the limitations recited in the claims, as required to establish a *prima facie* case of obviousness.

As the Examiner admits, *Miller* fails to teach or suggest "controlling calibration timing for a metrology tool for measuring various parameters of a sample under test." (*Office Action*, p. 4, ¶ 11B.) Specifically, *Miller* fails to teach or suggest "calibrating a metrology tool," "using a first parameter measured on at least one reference substrate," "measuring a second parameter on at least one non-reference substrate using the metrology tool," "measuring the first parameter of at least one film on at least one reference substrate using the metrology tool," "determining when a first parameter measurement drift with respect to the calibrated first parameter measurement exceeds a pre-determined value" and "calibrating the metrology tool in response to the first parameter measurement drift exceeding the predetermined value," all as recited in claim 1.

The Examiner asserts that it would have been obvious to one of ordinary skill in the art to modify the auto-calibration method of *Miller* to calibrate metrology tools because such an auto-calibration method can be implemented in almost any field of endeavor for calibrating a tool to make accurate

measurements. However, the Applicants note that any modification of *Miller* would still be required to yield the limitation recited in the claims.

Here, *Miller* teaches calibrating an A/D or D/A converter circuit using reference signals provided by a precise electrical reference signal or signals. *Miller* fails to teach or suggest calibrating a metrology tool using a first parameter measured on at least one reference substrate; measuring a second parameter on at least one non-reference substrate using the metrology tool; measuring the first parameter of at least one film on at least one reference substrate using the metrology tool; determining when a first parameter measurement drift with respect to the calibrated first parameter measurement exceeds a pre-determined value; and calibrating the metrology tool in response to the first parameter measurement drift exceeding the predetermined value, as recited in claim 1. As such, a *prima facie* case of obviousness has not been established as *Miller* in combination with the knowledge generally available to one of ordinary skill in the art fails to yield the limitations recited in claim 1.

Thus, claim 1 is patentable over *Miller*. Accordingly, the Applicants respectfully request that the rejection be withdrawn and the claim allowed.

C. 35 USC §103 Claims 2-13 and 18-19

Claim 2-13 and 18-19 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Miller*. The Examiner takes Official Notice regarding the limitations recited in each of the limitations of the dependent claims are commonly known “in view of *Miller*’s teaching.” The Applicants respectfully disagree.

“Official notice unsupported by documentary evidence should only be taken by the examiner where the facts asserted to be well-known, or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well-known.” MPEP §2144.03 A.

Here, as noted above, the Examiner admits that *Miller* fails to teach or suggest “controlling calibration timing for a metrology tool for measuring various parameters of a sample under test.” (*Office Action*, p. 4, ¶ 11B.) As such, in

addition to failing to teach or suggest the limitations recited in claim 1 as discussed above, the teachings of *Miller* are further completely devoid of any teaching or suggestion to replace the electrical reference signal or input signal being operated upon by the A/D or D/A converter circuit with parameters such as film thickness or critical dimensions, as recited in claims 2-5, 13, and 18-19; or to utilize an optical measuring tool, as recited in claims 6 and 18; or to utilize reference substrates and product substrates as recited in claims 1, 7, and 19.

Moreover, the Applicants note that *Miller's* teachings regarding auto-calibration systems for A/D or D/A converter circuits are completely out of context with respect to the present invention and, therefore, the limitations recited in claims 1-13 and 18-19. As such, Official Notice is improper here and a *prima facie* case of obviousness has not been established as *Miller* in combination with the knowledge generally available to one of ordinary skill in the art fails to yield the limitations recited in the rejected claims.

Thus, claims 2-13 and 18-19 are patentable over *Miller*. Accordingly, the Applicants respectfully request that the rejection be withdrawn and the claims allowed.

CONCLUSION

Thus, the Applicants submit that all claims now pending are in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issuance are earnestly solicited.

Accordingly, both further consideration of this application and its swift passage to issue are earnestly solicited. If, however, the Examiner believes that any unresolved issues still exist, it is requested that the Examiner telephone Alan Taboada at (732) 935-7100 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

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